ABSTRAK

Nama	: Luis Ferdinand
NIM	: 41520010233
Program Studi	: INFORMATICS
Judul Laporan Skripsi	: Predicting Mpl Id Match Winner Through Player Statistics and Team Performance Metrics: A Data-Driven Analysis
Pembimbing	: Ir. Emil R. Kaburuan, Ph.D., IPM., ASEAN Eng.

Penelitian ini bertujuan untuk memprediksi hasil pertandingan di Mobile Legends Professional League (MPL) menggunakan pembelajaran mesin. Studi ini menganalisis statistik pemain dan tim, dengan fokus pada variabel seperti Gold/Game, Damage/Game, KDA, Objective Rating, dan Win Rate. Data dari 12 musim MPL terakhir digunakan, dengan teknik purposive sampling yang menargetkan pertandingan relevan.

Tiga algoritma pembelajaran mesin digunakan: Logistic Regression, Random Forest, dan XGBoost. Analisis Data Eksploratif (EDA) dilakukan untuk mengidentifikasi fitur yang signifikan, diikuti dengan prapemrosesan dan normalisasi data. Tim dikodekan secara numerik untuk pelatihan model. Model dievaluasi menggunakan fungsi best-of-5 series untuk memprediksi hasil pertandingan.

Hasil menunjukkan ONIC sebagai pemenang konsisten di semua model, dengan variasi pada posisi runner-up dan tempat ketiga. Logistic Regression dan XGBoost menempatkan ONIC sebagai pemenang, dengan BTR dan GEEK sebagai runner-up, masing-masing. Model Random Forest memprediksi EVOS sebagai runner-up.

Kesimpulannya, model-model ini menunjukkan potensi pembelajaran mesin dalam memprediksi hasil pertandingan esports, memberikan wawasan berharga bagi tim dan analis MPL. Penelitian di masa depan dapat meningkatkan akurasi dengan memasukkan metrik pemain yang lebih rinci dan mempertimbangkan META (most effective tactics available).

Kata Kunci: Pembelajaran Mesin, MPL, Mobile Legends, Pemodelan Prediktif, Esports

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Supervisor	: Ir. Emil R. Kaburuan, Ph.D., IPM., ASEAN Eng.

This research aims to predict match outcomes in the Mobile Legends Professional League (MPL) using machine learning. The study analyzes player and team statistics, focusing on variables such as Gold/Game, Damage/Game, KDA, Objective Rating, and Win Rate. Data from the past 12 MPL seasons were used, with purposive sampling targeting relevant matches.

Three machine learning algorithms were employed: Logistic Regression, Random Forest, and XGBoost. Exploratory Data Analysis (EDA) was conducted to identify significant features, followed by data preprocessing and normalization. Teams were encoded numerically for model training. The models were evaluated using a best-of-5 series function to predict match outcomes.

Results showed ONIC as the consistent winner across all models, with variations in runner-up and third-place positions. Logistic Regression and XGBoost placed ONIC as the winner, with BTR and GEEK as the runner-up, respectively. The Random Forest model predicted EVOS as the runner-up.

In conclusion, the models demonstrate the potential of machine learning in predicting esports match outcomes, providing valuable insights for MPL teams and analysts. Future research can improve accuracy by incorporating more detailed player metrics and considering META (most effective tactics available).

Keywords: Machine Learning, MPL, Mobile Legends, Predictive Modeling, Esports